REMARKS

Claims 1-36 are pending, with claims 1, 10, 19, 27, 33, 34, and 36 being independent. Claims 1-6, 9-15, 19-20, 23, 25-28, 31, and 33-36 have been amended. New claims 37-43 have been added, with new claim 41 being independent. No new matter has been added. Reconsideration and allowance of the above-referenced application are respectfully requested.

Claims 2, 3, 5, 6, 9, 11, 12, 14, 19, 25, and 26 stand objected to for various informalities. Claims 10-12, 15, 19, 20, 27, 28, and 34-36 stand rejected under 35 U.S.C. 112, second paragraph, as allegedly being indefinite. Claims 1-6, 9-15, 19-20, 23, 25-28, 31, and 33-36 have been amended to correct informalities and to address the alleged indefiniteness. With respect to claims 10, 27, and 36, the amendments make clear that these are not means-for claims, as suggested in the office action. In view of these amendments, withdrawal of these claim objections and rejections is respectfully requested.

Claims 1-33 and 36 stand rejected under 35 U.S.C. 102(b) as allegedly being anticipated by Hasebe et al. (US 5,734,412). This contention is respectfully traversed.

Hasebe fails to teach or suggest a code being constructed from a plurality of pixels. Hasebe describes a marking device using a scan type laser. The Hasebe device scans a laser beam over the surface of an object to inscribe a graphic. The plurality of dots referred to in Hasebe are control coordinates for the scan type laser and not pixels that form a code on a product. (See Hasebe at col. 10, lines 20-43.) Thus, for at least this reason, independent claims 1, 10, 19, 27, 33, and 36 should be allowable.

Additionally, claims 1 and 10 have been amended to further specify that the pixels are printed by continuously directing a printing beam "to a plurality of locations on a material of the product as defined by the corrected data set, without de-activating the printing beam, to alter an optical characteristic of the material at the locations, a dwell time at each location being longer than a dwell time on areas of the material traveled by the printing beam between consecutive locations, wherein the locations on the material having the altered optical characteristic form the code on the product." In contrast, Hasebe turns the laser on and off respectively at the start and end of each of the line segments that form the graphic. (See Hasebe at col. 10, lines 26-28.)

Thus, independent claims 1 and 10 should be patentable over the art of record, and dependent claims 2-9 and 11-18 are patentable based on the above arguments and their own merits.

For example, with respect to dependent claims 2, 3, 11, and 12, the two-dimensional scanning of the laser referred to in the office action does not constitute printing a two dimensional trace of pixels or spots, as claimed, for the reasons discussed above. Additionally, independent claims 33 and 36 have been amended to include the limitations of claims 1 and 10 respectively. Thus, independent claims 33 and 36, and their new dependent claims 37 and 38, are patentable based on the above arguments.

With respect to independent claims 19 and 27, Hasebe fails to teach or suggest prioritizing an order in which pixels are printed such that the pixels are printed in a direction that is opposite to the direction the product moves. The prioritization performed in Hasebe is prioritization of the characters that make up the code and not of pixels. The prioritization in Hasebe is based on reference points, where each reference point corresponds to a character of the mark, as clearly shown in the drawings. (See Hasebe at col. 6, lines 1-28; col. 8, lines 7-44; FIGS. 3A-4A; and col. 9, lines 41-52.) Even assuming for the sake of argument that the sub-components of the characters in Hasebe constitute pixels at claimed, Hasebe never suggests that the order of marking these sub-components can be changed. Rather, Hasebe explicitly shows that such sub-components are scanned in a specified order that is not dependent upon the moving direction of the object. (See Hasebe at col. 12, lines 19-23; and FIG. 10.) Thus, independent claims 19 and 27 should be patentable over the art of record, and dependent claims 20-26 and 28-32 are patentable based on the above arguments and their own merits.

For example, with respect to dependent claims 22 and 30, the art of record fails to teach or suggest a code being constructed of pixels, where each pixel is constructed from a plurality of spots, and prioritizing the order in which the spots are printed such that the spots are printed in a direction which is opposite to the direction which the product moves. Furthermore, dependent claims 23 and 31 are also patentable for the reasons discuss above in connection with claims 1 and 10. For all of these reasons, all of claims 1-33 and 36-38 should now be in condition for allowance.

Claims 34 and 35 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Hasebe et al. in view of Spratte et al. (US 5,175,425). This contention is respectfully traversed.

Spratte describes marking semiconductor surfaces with a bar code, wherein every bar element is formed as a series of overlapping softmark melting points produced by means of laser bombardment. The melting points of the bar elements are applied at a depth of less than 2 micrometers, and the laser bombardment is controlled with respect to time so that, when producing one of the softmark melting points, the previously produced softmark melting point is at least partially hardened again. (See Spratte at Abstract.)

There is insufficient motivation to combine Spratte with Hasebe. The motivation identified in the office action is "for the purpose of providing a high resolution code on the surface of the object to be marked." However, there is nothing in the references themselves that would suggest a benefit to increasing resolution of the code in Hasebe, and the office action does not indicate that such a benefit would have been in the knowledge generally available to one of ordinary skill in the art. In fact, it is entirely unclear how the techniques of Spratte could be applied in the system of Hasebe to increase the code resolution.

Spratte describes specific techniques for forming a series of overlapping softmark melting points on semiconductor surfaces, where the laser bombardment is preferably controlled with respect to time such that the previously applied softmark melting point is hardened again at least partially when applying a softmark melting point. (See Spratte at col. 2, lines 60-65.) The timing restrictions imposed by the systems and techniques of Spratte teach away from the suggested combination with Hasebe, which is directed to printing on a moving product. Moreover, the technical differences in the types of laser systems being used in the two references calls into question whether there would even be a reasonable expectation of success for the suggested combination, which is necessary to establish a prima facie case of obviousness. (See MPEP 706.02(j).)

In addition, Spratte never actually mentions providing "a high resolution code." Rather, Spratte describes a specific implementation that achieves "a high character density" by forming

the wide bars by means of two bar elements, which are applied at a slight distance relative to one another. (See Spratte at col. 2, lines 27-46.) Changing the character density of a code (i.e., changing the number of code characters per unit area of the code) is not equivalent to changing a density of pixels that construct the code (i.e., changing the number of code pixels per unit area of the code). Spratte is describing changing character density by reducing the size of the characters, and thus the area taken up by the code. This is not equivalent to changing the density of the soft mark melting points that make up the code in Spratte, and thus, cannot be equated with changing a density of pixels that construct a code, as claimed, which can result in a higher throughput speed in a code printing system.

In order to better emphasize the patentable distinctions over the art of record, independent claim 34 has been amended to call for "changing a density of the pixels that construct the code in response to a change in velocity of the product moving in the direction." Dependent claim 35 has been amended to recite, "wherein the density of the pixels is decreased in accordance with a reduced amount of time available to print the code on the product." New dependent claim 39 has been added and recites, "wherein changing the density of the pixels comprises changing a number of spots that form each of the pixels on the product." New dependent claim 40 has been added and calls for "prioritizing an order in which the pixels are printed based on the direction of the product and an aperture associated with the printing system." New claims 41-44 have also been added, and these claims include limitations corresponding to claims 34-35 and 39-40. The art of record fails to teach or suggest the subject matter of claims 34-35, 39-40, and 41-44 for the reasons discussed above, and thus these claims should be in condition for allowance.

It is respectfully suggested for all of these reasons, that the current rejection is totally overcome; that none of the cited art teaches or suggests the features which are now claimed, and therefore that all of these claims are in condition for allowance. A formal notice of allowance is thus requested.

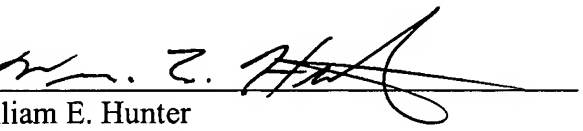
Additionally, it is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific issue or comment does not signify agreement with or concession of that issue or comment. Because the arguments made above may not be

exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

Enclosed is a $230.00 check covering the cost of excess claim fees. Please apply any other necessary charges or credits to deposit account 06-1050.

Respectfully submitted,

Date: 09/27/2004



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